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SUBJECT: KAZAKHSTAN - SCIENCE AND TECHNOLOGY - BIOTECH AND
AGRICULTURE

Summary

¶1. EST Officer's January 20 - February 19 TDY visit to Kazakhstan provided a timely opportunity to discuss the Kazakhstani government's Science and Technology (S&T) infrastructure, particularly in light of continued negotiations on a bilateral Science and Technology Agreement. This cable focuses on biotechnology and agriculture and is one of a series of four cables summarizing EST officer's meetings in Kazakhstan. End Summary.

National Biotechnology Center

¶2. EST officer met with Kasym Mukanov, Deputy Director of National Biotechnology Center (NBC) in Astana. Mukanov stated the NBC currently has 700 employees, 90 percent of whom are researchers and scientists. The NBC focuses on three areas: biotechnology, avian influenza and bio-chem security. He said that the NBC is currently cooperating internationally with U.S. universities including Auburn, Texas A&M, UC Davis, and Rutgers. The NBC is currently allocated \$1 million to conduct international cooperation and this allotment should grow in the future. The NBC has allotted \$100,000 for bilateral cooperation with each university. Mukanov stated that the NBC also currently cooperates internationally with Japan, France, Russia, and Israel. The three main aims of the NBC are competitive research, training of personnel, and deepening international cooperation. Mukanov said he would like to see more visiting professors and lecturers in Kazakhstan. Currently the NBC receives 13 per year. The NBC will also build a new biotechnical campus 60 km outside of Astana. This center will have 27 state-of-the-art laboratories and an onsite hotel for visiting researchers. The labs will meet the international standards of security (BSC-2) and will meet the GLP (Good Labs Practice) standard.

¶3. Mukanov stated that NBC's overall research focus includes biotechnology for agriculture, veterinary medicine, medical biotechnology, food processing and what was termed as "bio-preservation," or cataloging bio-materials. Another NBC focus is producing new strands of agricultural products that can be sustained in the cold and harsh climate of Kazakhstan's Steppe. Thus far the NBC has produced new strains of rice and wheat which are currently in the production phases in Kazakhstan. Mukanov stated these new strains were not Genetically Modified Organisms (GMO's) but were instead created through "advanced cross-pollination techniques focused on select trait isolation." Mukanov mentioned that GMO's have not been accepted in Kazakhstan and he was unsure if they would be. In the field of veterinary medicine, Mukanov stated the NBC has created 26 new vaccines and 28 diagnosis medicines. He also claimed the NBC has created a vaccine for avian influenza. (Note: This claim was not confirmed. End Note.) The NBC's medical biotechnology research is focused on treatments for cancer, tuberculosis, and diabetes, as well as eye and heart disease. The NBC has developed a strand of microorganism that can destroy oil in

soil or water. Mukanov said that the strand has been tested in an area outside of Karaganda, Kazakhstan, after an oil leak had occurred. This microorganism was used on three hectares of land and was successful at cleaning up the spill. Other areas the NBC is focusing on include food processing, dietary supplements and new breeds of yeast. The NBC is also tasked with bio-resource preservation. The NBC is in the process of collecting bio-organisms, plants, and animals to be kept as part of a record. Mukanov was very interested in potential future cooperation with additional U.S. universities and welcomes cooperation with U.S. technical agencies.

Center for Biological Research

¶4. EST officer met with Amangeldy Sadanov, Director General of the Center for Biological Research (CBR) in Almaty, as well as with the directors of the CBR's subsidiary institutions. The CBR is headquartered just outside Almaty. Sadanov stated that the CBR was established in 2004 as a public-private partnership that reports to the Ministry of Education and Science. The CBR consists of nine institutes and two branch offices covering such topics as molecular biology and chemistry, genetics, psychology, physiology of humans and animals, microbiology, virology, zoology, botany, bio-control, and pre-clinical testing. When asked about overlaps of subject areas with the Ministry of Agriculture, Sadanov said that although they may cover similar subject areas the research performed is different.

The CBR only works directly with the Ministry of Agriculture when contracted to do so. Sadanov stated that the CBR employs 1500 researchers in total, of whom 97 are post-doctoral, 500 PhD's, and the rest researchers.

¶5. For funding, Sadanov stated that each institution must apply to

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the CBR Committee to have its research proposals evaluated and rated. This standard applies to applied research, as basic research receives a continued base of funding. Another source of funding for the institutions is through contracting work for other ministries and private companies. With this method, an MOU can be signed at any level of the CBR structure and still be valid within the CBR structure. Sadanov claimed government funding for the CBR has been increasing, though he was reluctant to discuss actual numbers.

¶6. Current international partners of the CBR include Russia, Kyrgyzstan, Uzbekistan, Switzerland, the Netherlands, Hungary, and Turkey. The CBR plans to send researchers on a seven month study tour to the United States sometime later this year. Sadanov stated the CBR has been allocated \$50 million annually for international cooperative research and was granted an additional \$50 million for this year. Sadanov emphasized his support for international cooperation and was hopeful a bilateral S&T agreement will lead to greater cooperation with the U.S. on science and technology issues.

¶7. Institute directors asked EST officer for assistance on two issues. One director understood that USDA had some money set aside specifically for Kazakhstan and wanted to know the status, and another director asked for assistance in finding a partner for a project on "virus free potatoes." He claimed that the International Science and Technology Center would provide his institution with \$400 million in funding if he could find an adequate American partner for this research. EST officer stated he would relay both messages directly to USDA.

Kazakh Agro-technical University

¶8. EST officer met with Aitbay Bulashev, President of the Kazakh Agro-technical University; Bazarkhan Rustembayev, Vice-Rector for Science; and Sara Kitaibekova, head of the university's international relations department. The university is located in Astana. The university currently has 6600 full time students. Bulashev said that every agrotech center in Kazakhstan has at least

one graduate of his school. He also claimed that the university is responsible for Kazakhstan's strength in agriculture. According to Bulashev, production of solid wheat exports to Europe had been growing steadily every year, thanks in part to the training of this university. Other than agriculture, the university has 35 research areas. Bulashev has set the goal to fully switch to the Western academic model by 2011. He noted that his university has had strong cooperation with a number of German universities. Through this partnership, students studying in Germany and Kazakhstan are eligible to receive a degree from both the German and Kazakhstani institutions. Bulashev said that the Department of Agriculture has made plans to move the university 60 km outside Astana, where it will be part of a newly-established agro-innovation center. Following the meeting with Bulashev, Kitaibekova showed EST officer the university's labs. Kitaibekova stated that the university invested heavily in equipment, but one problem is that the researchers have had little or no training on it. Thus, in most labs the new equipment sits idle and covered.

KazakhAgroInnovations

¶9. The meetings at Kazakh Agro-technical University led to a meeting in Astana with Myrzageldy Abdraimov, Vice President of KazAgroInnovations. Abdraimov stated that KazAgroInnovations(KAI) manages all agriculture sciences in Kazakhstan. KAI manages 60 institutions and two research centers with a goal of commercialization of agricultural research. Abdraimov believes that Kazakhstan needs not only to borrow technologies from abroad but also to adapt them to the local environment. He sees future cooperation as a means to improve the training of researchers on new equipment purchases. KAI's focus areas include biofuels, clean production, waste management, environmental protection, and a gene exchange program. Abdraimov also described ongoing cooperation with the U.S. Department of Agriculture under which KEI sent 35 researchers to the United States to work with American counterparts.

At the conclusion of the meeting, Abdraimov arranged a brief meeting for EST officer with the Minister of Agriculture, Berek Ospanov. Ospanov strongly supports cooperation with the United States and praised the S&T strength of the U.S.

¶10. EST officer met with Dr. Bayan Alimgaznova, head of the division of Agriculture Science, Education and Innovation, Ministry of Agriculture. Alimgaznova explained that her department is responsible for setting a strategy for agro-science and education development on a three-year basis. Alimgaznova stated that 15 percent of the Bolashak scholars enter into the agro-sciences and that this program has greatly helped the agro-sciences in Kazakhstan.

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Comment

¶11. The agriculture sector is a major part of the Kazakhstani economy and significant investment has been made in the agricultural sciences as well as biotechnology. As one of the successor states to the USSR, Kazakhstan inherited a number of bio-technological researchers and centers which the Kazakhstanis hope to capitalize on. When a bilateral S&T agreement is concluded, it would be highly beneficial for USDA, NSF, EPA as well as any other agencies that have significant interests in agro-biotechnology to consider working with Kazakhstani scientists. End Comment.

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